

ABSTRACT

The present invention seeks to provide a turbine blade with increased creep capability for both uncooled and cooled turbine blades while generally maintaining operating stress levels at an interface region between the turbine blade and a turbine disk. A turbine blade is disclosed having an attachment, a neck, a platform, and an airfoil. Extending radially outward from the attachment, through the neck, and terminating radially inward of the platform is a plurality of first cavities. The turbine blade in accordance with the preferred embodiment of the present invention is cast from a high density nickel base alloy with high temperature capability and improved creep capability. A plurality of first cavities are placed in the attachment and neck region to reduce excess weight of the turbine blade due to the higher density, greater creep capable alloy. Reducing the weight of the blade in this region provides increased creep capability in the turbine blade airfoil while maintaining operating stress levels.